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Notice of Allowability	Application No.	Applicant(s)	
	10/677,091	ARNAUD, JOHNNY	
	Examiner	Art Unit	
	David A Reifsnyder	1723	

-- **The MAILING DATE of this communication appears on the cover sheet with the correspondence address--**
 All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to communication filed on March 15, 2004.
2. ☒ The allowed claim(s) is/are 1-7, 10-16, 18-22 and 38-59 (renumbered claims 1-21, 23-31, 22 and 32-41, respectively).
3. ☒ The drawings filed on 01 October 2003 are accepted by the Examiner.
4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☐ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 6. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

- | | |
|---|---|
| <ol style="list-style-type: none"> 1. <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) 3. <input checked="" type="checkbox"/> Information Disclosure Statements (PTO-1449 or PTO/SB/08),
Paper No./Mail Date <u>10/03 and 3/04</u> 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit
of Biological Material | <ol style="list-style-type: none"> 5. <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) 6. <input type="checkbox"/> Interview Summary (PTO-413),
Paper No./Mail Date _____. 7. <input checked="" type="checkbox"/> Examiner's Amendment/Comment 8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance 9. <input type="checkbox"/> Other _____. |
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EXAMINER'S AMENDMENT

An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

In The Specification

The application has been amended as follows:

The first paragraph on page 2 has been replaced with the following amended paragraph:

CROSS-REFERENCE TO RELATED APPLICATIONS

This application is a divisional application of co-pending application Serial No.09/879,496, originally entitled "Method and Apparatus for Mixing Fluids, Separating Fluids, and Separating solids from Fluids" which is hereby incorporated by reference herein in its entirety, now U.S. Pat. No. 6,669,843, issued December 30, 2003, entitled "Apparatus for Mixing Fluids" by Johnny Arnaud, also incorporated by reference herein in its entirety.

REASONS FOR ALLOWANCE

The main reason for the allowance of claims 1-7 is the instantly claimed cyclone filter for separating particles from a fluid, comprising: a cylindrical chamber having an inlet for receiving the fluid with the particles; a ring having a plurality of grooves, the ring being concentric to the cylindrical chamber, the ring having an outer diameter on a first end that is smaller than a diameter of the cylindrical chamber, thus defining a distribution channel; an intermediate tube adapted to receive fluid from the grooves; a collection chamber having an upper cylindrical portion connected to a substantially frustoconical portion, the collection chamber having a solids outlet located on a lower end of the frustoconical portion, an upper end of the upper cylindrical portion being connected to the intermediate tube; and a vortex finder tube being concentric with the intermediate tube thus defining a down-flow annulus on one end and having a fluid outlet on the other end extending upwardly out of the cylindrical chamber.

The main reason for the allowance of claims 10-16 is the instantly claimed cyclone filter for separating particles comprising: a cylindrical chamber having an inlet for receiving the fluid with the particles; a ring having a plurality of grooves, the ring being concentric to the cylindrical chamber, the ring having an outer diameter on a first end that is smaller than a diameter of the cylindrical chamber, thus defining a distribution channel; a collection chamber having an upper cylindrical portion

connected to a lower substantially frustoconical portion, the collection chamber having a solids outlet located on a lower end and having an upper end adapted to receive fluid from one grooves; and a tube being coaxial with the collection chamber, the tube having one end disposed inside the upper cylindrical portion of the collection chamber, the tube having another end extending upwardly out of the cylindrical chamber.

The main reason for the allowance of claims 18-22 is the instantly claimed cyclone filter for separating particles from a fluid comprising: a cylindrical chamber having an inlet for receiving the fluid with the particles; a ring having a plurality of grooves, the ring being concentric to the cylindrical chamber; a collection chamber having an upper cylindrical portion connected to a lower substantially frustoconical portion, the collection chamber having a solids outlet located on a lower end and having an upper end adapted to receive fluid from the grooves, the ring having an outer diameter that is smaller than a diameter of the upper cylindrical portion of collection chamber, thus defining a distribution channel; and a skirt being coaxial with the collection chamber, the skirt having one end disposed inside the upper cylindrical portion of the collection chamber, the tube having another end extending upwardly out of the upper cylindrical portion of the collection chamber.

The main reason for the allowance of claims 38-59 is the instantly claimed cyclone filter for separating particles from a fluid comprising: a cylindrical chamber having an inlet for receiving the fluid with the particles; a ring having a plurality of

grooves, the ring being concentric to the cylindrical chamber, the ring having an outer diameter on a first end that is smaller than a diameter of the cylindrical chamber, thus defining a distribution channel; a collection chamber having an upper end adapted to receive fluid from one grooves, a down-flow annulus adapted to provide fluid communication between one of at least one of the grooves and the collection chamber.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Prior Art

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Hesse et al. who discloses a hydrocyclone comprising a inlet into a inlet chamber, the inlet chamber including a spiral insert.

Conclusion

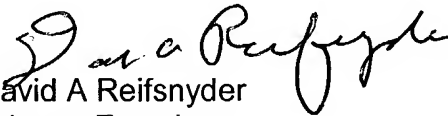
Any inquiry concerning this communication or earlier communications from the examiner should be directed to David A Reifsnnyder whose telephone number is (571) 271-1145. The examiner can normally be reached on M-F 9:00 AM to 5:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wanda M Walker can be reached on (571) 272-1151. The fax phone

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number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


David A Reifsnyder
Primary Examiner
Art Unit 1723

DAR